An introduction to the sustained approach to myofascial release for the treatment of physical and psychogenic pain

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The term 'ubiquitous tissue' is often used to describe the fascial tissues in that they touch all others. Fascia typically represents the soft tissue class of connective tissues and comprises of three main elements, that of cells and an extracellular matrix of fibres and a polysaccharide ground substance. The current accepted anatomical definition of a fascia is, *"a sheath, a sheet or any number of other dissectible aggregations of connective tissue that forms beneath the skin to attach, enclose, separate muscles and other internal organs"* [1]. While this definition is scientifically accurate, there is also a more encompassing clinical definition of fascia proposed by a subcommittee of the Fascia Research Congress describing the fascial system as '*a three-dimensional continuum of soft, collagen-containing, loose and dense fibrous connective tissues that permeate the body. It incorporates elements such as adipose tissue, adventitiae and neurovascular sheaths, aponeuroses, deep and superficial fasciae, epineurium, joint capsules, ligaments, membranes, meninges, myofascial expansions, periostea, retinacula, septa, tendons, visceral fasciae, and all the intramuscular and intermuscular connective tissues including endo-/peri-/epimysium. The fascial system interpenetrates and surrounds all organs, muscles, bones and nerve fibres, endowing the body with a functional structure, and providing an environment that enables all body systems to operate in an integrated manner'* [2].

Fascia connects and separates all other structures as well as providing cohesion and support. It permits movement and glide between structures and plays a vital role in cellular respiration, elimination, fluid and lymphatic flow. It is the largest sensory organ of the body with approximately six times a higher quantity of nerve supply than its red muscle counterpart [3]. It is a highly mechanosensitive and proprioceptive structure supporting locomotion and posture as well as providing interoceptive information on body regulation. As the fascial network touches all other structures, it must play a role in body-wide function, and therefore must also play a significant role in dysfunction.

The fascial system is commonly discussed in relationship to the musculoskeletal structures as it forms the endo-/peri-/epimysium. Research has shown that musculoskeletal structures not only transmit force through their musculotendinous junctions but also via their surrounding fascial structures. The fascial network transmits approximately 30%-50% of force between muscular synergists and antagonists [4]. Also, research has shown that '*radial stress is 50% of longitudinal stress in the soleus, medial gastrocnemius, and elbow flexor and extensor muscles*' [5]. Fascia, therefore, supports joint movement, coordination and control. However, instead of muscles eccentrically and concentrically loading creating joint lever action, fascia creates a radial stress

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around the muscle thereby shortening it. This new view of force transmission where the body moves and functions as one unit highlights the biotensegrity model opposed to single body part biomechanics.

However, it is also valuable to consider fascia as one integrated structure and not a collection of parts, layers, sheaths, chains and lines. Dr Jean-Claude Guimberteau, a French hand surgeon, describes fascia as '*multimicrovacular collagenic absorbing system'* that is capable of dynamic movement, gliding capacity and '*constitutes the primary network of the human body'*. Fascia is often thought of as fibres yet, the extracellular matrix is the substance, which according to Guimberteau, provides '*total tissue continuity'* where there are *'no empty spaces'* as *'everything is completely connected by fascia'* [6]. The ECM contains the polysaccharide ground substance which assists the distribution of mechanical stress throughout the network responding to both internal and external pressure. The ground substance is also responsible for the lubrication of the tissues promoting glide and mobility between structures. Fascia is a colloidal viscoelastic structure. It conforms to the shape of its container, can adapt to load and pressure but is not compressible. Once load and pressure are removed, fascia will return to its original shape. These properties provide the body with a high degree of mobility and flexibility yet at the same time optimise control and coordination.

As fascia is one integrated, connected system, any deformation is communicated throughout the network causing strain patterns and distortion in distant pain sensitive structures. Fascia's viscoelastic properties provide support and control for imbalanced structures, however, once the ground substance becomes more viscous, tissue dehydration occurs and structures adhere together creating structural dysfunction. Fascial restrictions can cause approximately 2000lbs per square inch of pressure obstructing circulatory and lymphatic tissues and compressing nerves [7].

The tensegrity approach and the knowledge that fascia connects all other structures provides a greater all-encompassing (w)holistic approach to the treatment of both acute and chronic pain. Often, patients complain of a pain in a certain body part, but symptomatic treatment yields limited results. If we consider the three-dimensional fascial network, one can theorise that their pain could originate from a distant body part with a fascial drag to their symptomatic area. Trigger point development, adhesions and structural imbalances can be considered as symptoms, and indeed can also be causative factors, of fascial system-wide distortion.

Knowledge and understanding of the fascial network has dramatically increased in recent years and has brought advancement and ratification in treatment approaches for fascial dysfunction and pain. Myofascial Release (MFR) is a manual hands-on therapy used for effective and long-lasting relief of system-wide structural dysfunction and pain. Many styles and approaches to MFR exist. However, there is increasing evidence that low load long duration stretch regulates tissue inflammation and fibroblastic activity [8] [9]. Recent research has shown that the use of MFR increased tissue slide of the transverse abdominis muscle in a clinical trial of patients with chronic low back pain [10] and in an additional trial, MFR also helped reduce tension type headaches [11].

The sustained approach to MFR, pioneered in the USA by John F. Barnes PT, uses a low yield long duration pressure into the patient's body targeting the mechanoreceptive, viscoelastic and thixotropic properties of the fascial network. The pressure used by the therapist is determined by the sense and feel of the patient's body. The applied pressure meets and matches the tissue 'end feel' which is never forced. Along with mechanotransduction, it is thought that the low load long duration stretch stimulates the piezoelectric effect that charges the tissue promoting tissue reorganisation [12]. This approach assists the reorganisation of the fascial structures reducing inflammation and dysfunction thereby restoring normal tone. As the ground substance is involved in cellular communication, when restrictions and adhesions are addressed with sustained low yield pressure, a subtle movement is felt in the patient's body. This movement is called myofascial unwinding and is a normal and natural response to sustained myofascial treatment. Often, emotion is experienced by the patient as their body moves into positions linked with state and context dependent memory. It is hypothesised that this phenomenon occurs as tissue bracing and emotional holding patterns are 'released' possibly, in part, due to the stimulation of interoceptors. Interoceptors are unmyelinated sensory free nerve endings, which are stimulated by low load pressure. Interoceptors communicate

information to the insular cortex of the brain opposed to the primary somatosensory cortex. The insular cortex is believed to play a role in consciousness with functions linked to emotion, pain perception, belief and homeostasis [13]. Pain experience, as described by the IASP, can be both psychogenic and physical in nature. The sustained approach to MFR is a unique and effective approach for the treatment of physical pain and the emotion and trauma which may be surrounding it. MFR is an excellent treatment approach for chronic pain due to the low load sustained pressure approach which is acceptable to those suffering from myofascial pain syndromes and fibromyalgia.

Common techniques in the approach target longitudinal and transverse fascial planes as well as more local techniques applied over structural imbalances such as anterior pelvic tilts, concentrically loaded tissues and visible scarring. As the fascia is a three-dimensional structure, the use of compression and traction techniques can be applied. Patients are treated on a treatment table in varying positions improving treatment efficacy and are also treated seated and standing. No lubrication oil or lotion is used to avoid slippage on the skin and allows for an enhanced kinaesthetic connection by the therapist.

This workshop on the sustained approach to MFR will showcase effective and easy to apply techniques with a brief overview of the sustained approach to MFR. The participant will learn the application of the 'cross hand release technique' which can be used anywhere on the body for all types of pain and discomfort with emphasis on kinaesthetic awareness as the key component of the technique. This workshops also provides a summary of the correlation between emotional trauma and physical pain and how MFR can be used to treat it. Also discussed are the practical uses and benefits of myofascial unwinding to help patients work with emotion or memory which may surface in a normal and natural manner as a response to the sustained approach to MFR.

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Ruth began her manual therapy career in the USA in 2000. She has been a pioneer of myofascial release (MFR) in the UK and has provided advanced myofascial release workshops for manual therapists under the name 'MFR UK' for 16 years. She has also lectured and taught MFR internationally including Kuwait, South Korea, South Africa, Portugal, Australia, Slovenia and Turkey. She is the author of 'A Hands On Guide to Myofascial Release' published by Human Kinetics.

Ruth is a founding member of the Fascia Research Society, is a past committee member for the British Fascia Symposium and has delivered many lectures and workshops at UK trade shows and conferences including TherapyExpo, COPA, The Sports Massage Association, The Massage Training Institute and The Scottish Massage Therapy Organisation and internationally at the International MyoPain conference in India.

Ruth's own training includes advanced myofascial release techniques, sports and remedial soft tissue therapy, functional rehabilitation approaches as well as many post graduate CPD workshops. Ruth is also currently undertaking a BSc (Hons) in Healthcare Science with the Open University

Ruth is passionate about sharing the values of fascial orientated manual therapy and promotes the phrase:

'it's not how much pressure you use but how much resistance you feel' - Ruth A Duncan.

All her workshops delivered through MFR UK promote the art of feeling what's happening under the therapist's hands allowing them to find, follow and treat the source of pain and dysfunction.

Ruth mun koma til Íslands og kenna fyrsta námskeiðið sitt, Structural Series part I, 5-6 september 2020.
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